DOCUMENT RESUME

ED 281 998 CE 047 073

AUTHOR Merkel-Keller, Claudia
TITLE At What Price Success?--Summer Basic Skills Remediation and Paid Employment.
PUB DATE Apr 87
NOTE 31p.; Paper presented at the Annual Meeting of the American Educational Research Association (Washington, DC, April 20-24, 1987). Small print in appended tables may affect legibility.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Achievement Tests; *Basic Skills; Competency Based Education; *Employment Programs; High Schools; Mathematics Instruction; Minimum Competency Testing; *Outcomes of Education; Program Effectiveness; Reading Instruction; *Remedial Programs; Skill Development; State Programs; *Summer Programs; Test Coaching; Writing Instruction; Youth Employment
IDENTIFIERS *New Jersey High School Proficiency Test

ABSTRACT

In preparation for the mandatory administration of the New Jersey High School Proficiency Test (HSPT) that was to begin with ninth graders in 1986, a pilot program was conducted with ninth graders who had done poorly on the HSPT during its second, nonmandatory administration in 1985. Approximately 125 students were selected (25 in each of five school districts in the state) for a summer intervention and basic skill strengthening program, coupled with paid employment. The students in the six-week programs were trained in reading, mathematics, and writing, including essay and multiple-choice writing. After six weeks, the students who completed the program (about 80) were tested. The data indicate that the overall program made a positive difference for the students and should be continued. However, only reading and mathematics test scores were positive overall, while scores varied across programs and were actually negative in some parts for some programs. Therefore, the following recommendations were made for improving programs: (1) more time for schools to plan programs, (2) more attention to work placement of students, (3) more parental involvement, (4) more broad-based recruitment of teachers, (5) more intensive training of teachers, (6) closer monitoring of the programs, and (7) scoring of tests at the state level to facilitate quicker turnaround of the data. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED281998

At What Price Success?--Summer Basic Skills Remediation and Paid Employment

Claudia Merkel-Keller

New Jersey State Department of Education

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Merkel-Keller

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Paper presented at the American Education Research Association Meeting, Washington, D.C., April 20-24, 1987

CE047073

BEST COPY AVAILABLE

TABLE OF CONTENTS

	PAGE
Assessed Need	1
Description	2
• Goals	2
• Objectives	3
Management Plan	3
• Budget	6
Implementation	7
• Pilot Sites	8
• Staffing	8
Results	10
Recommendations and Conclusions	12
Appendix	13

ASSESSED NEED:

The newly passed Carl D. Perkins Vocational Education Act (P.L. 98-524) speaks to the need to provide vocational education services and activities to traditionally under served groups in order to meet their needs and hence to respond to the nation's existing and future work force demands. P.L. 98-524 seeks to enhance the participation of --

1. handicapped individuals;

2. disadvantaged individuals;

3. adults who are in need of training and retraining;

4. individuals who are single parents or homemakers;

5. individuals who participate in programs designed to eliminate sex bias and stereotyping in vocational education; and,

6. criminal offenders who are serving in a correctional institution.

Concurrent with efforts at the national level to target vocational services and funds to upgrade skill development for targeted groups, the New Jersey State Department of Education has also initiated a thrust to upgrade the basic skills performance of New Jersey students by requiring that students pass the High School Proficiency Test (HSPT) as one of the criteria for high school graduation.

Spring 1985 marks the second administration of the New Jersey HSPT. The HSPT is a more rigorous assessment of reading, mathematics and writing skills than is the Minimum Basic Skills (MBS) test, and requires students to apply skills in seeking solutions. Beginning with the ninth grade class of 1985-86, students must pass all three parts of the HSPT to satisfy one of the statewide high school graduation requirements.

The underpinnings of any student's ability to compete in the work force are demonstrated competencies in reading, writing and mathematics. Recognizing that core competencies are critical to the success of our students, one can respond to the critics who say that the test is just too hard, and that too many students will fail and drop out of school. Discouraged and robbed of their self-esteem, these students will then face an uncertain future. The fact is that we are already condemning them to an uncertain future. We are sending them out into the work force believing their diplomas prove they are ready for the challenges ahead. Too many of these students quickly discover they are not prepared.

Commissioner Cooperman has spoken to the issues described above on numerous occasions. In a presentation to the State Board of Education on July 11, 1984, the Commissioner outlined a report entitled "High Schools and the Changing Workplace" which was prepared by a panel of the National Academy of Sciences. The education and business leaders on the panel pointed out that the largest segment of the American labor force is made up of high school graduates who do not go on to a four-year college. Obviously, the high school graduate is a cornerstone of the nation's economy. The national panel found that these workers, in order to succeed, must be trained in what

are called "core competencies." In other words, students must be able to identify problems and weigh solutions; they must be able to read and interpret manuals and other written materials; they must be able to use mathematics to solve-on-the-job problems. And, of course, all graduates must have a command of the English language, and be able to write clearly and grammatically.

One cannot possibly know what demands the twenty-first century will bring. The "core competencies," however, will provide a solid foundation for graduates who will face a rapidly changing workplace during some 50 years in the work force. It used to be that young people didn't have to worry if they failed to do well in school. They could always drop out and make a living by the strength of their backs. Now, robots are replacing people on the assembly line. Even the military services -- once a popular choice for the non-college-bound -- need capable men and women who can solve problems and learn to handle complex electronic equipment.

Given the rationale provided above, the Division of Vocational Education proposed a Summer Work Study Vocational Program to respond to the need for strengthening basic skills triggered by the administration of the 1985 High School Proficiency Test (HSPT). The program served vocational students entering grade 10 who scored poorly on the 1985 HSPT. A total of 125 students were identified to participate in the program based on (1) guidelines prepared by the Division of General Academic Education, New Jersey State Department of Education and (2) criteria identified by the school district.

Five high need, urban districts took part in this pilot undertaking:

- New Brunswick,
- Vineland,
- Paterson,
- Bayonne,
- Passaic County Vocational Technical School

Each of the five districts identified 25 of its vocational students to participate in the program.

DESCRIPTION OF PROGRAM

The Summer Work Study Vocational Program was premised on the concept that intensive summer intervention and strengthening of the basic skills, coupled with paid employment, for the identified students would provide them with the skills necessary to pass the 1986 HSPT.

Goals of the program

- To remediate basic skill deficiencies in reading, writing and mathematics noted on the HSPT for identified students.

- To provide paid summer employment opportunities for identified students.

- To motivate students to stay in school by improving their self-esteem and by strengthening their basic skills proficiencies.
- To increase recognition for educational accomplishments to encourage students to excel.
- To recognize student improvement in different ways for different students, and in ways that are valued by the peer group.
- To use cooperative learning strategies in classrooms that encourage team work, which is desirable in the workplace.
- To encourage closer student-teacher relationships that can help deepen student knowledge.
- To develop competency profiles that appraise the student's skills.

Objectives of the program

- All students in the summer program will improve their basic skills performance as evidenced by their scores on the post test (1985 HSPT to be administered at the end of the summer program).
- All students in the summer program will increase their feelings of self-esteem and self-confidence as a result of their improved basic skills performance and their summer work experience. This information will be provided by guidance personnel.
- All students who have participated in the summer intervention program will pass the 1986 HSPT.

MANAGEMENT PLAN:

The six week summer intervention program was conducted from July 8, 1985 to August 16, 1985 in each of the 5 pilot sites identified. Described below is the management plan for the implementation of the summer program:

TASK & TASK DESCRIPTION	RESPONSIBILITY
1. Develop summer program:	
•vocational component which includes job placement opportunities for identified students	Division of Vocational Education
•guidance component-local guidance staff to provide ongoing support and assistance to students in the summer program	Division of Vocational Education 6/25/85
•curriculum component focusing on the skills and competencies arrayed on the HSPT in reading writing and mathematics	Division of General Academic Education in process to be ready 6/25/85

TASK & TASK DESCRIPTION	RESPONSIBILITY

READING
a. literal comprehension/ vocabulary
b. inferential comprehension
c. critical comprehension

WRITING
a. sentence structure
b. organization of ideas
c. editing
d. cohesive essay writing

MATHEMATICS
a. fractions
b. decimals
c. percents
d. number concepts
e. measurement and geometry
f. pre-algebra
g. problem solving

•training component to include activities that will:
a. make teachers aware of the specific skills in each of the HSPT clusters and the students' responses to them
b. increase teachers' skill in analyzing students' incorrect responses
c. provide teachers with the prior knowledge that they need to give to their students
d. provide teachers with sample activities which they can use to plan other activities for their students

2. Identify pilot sites based on the target audiences identified in the Carl D. Perkins Vocational Education Act (P.L.98-524) and based on the rationale provided in terms of high need students who need remediation in the basic skills. The following districts will participate in the program: — Division Vocational Education

TASK & TASK DESCRIPTION	RESPONSIBILITY
• New Brunswick School District • Vineland School District • Paterson School District • Bayonne School District • Passaic County Vocational Technical School	
3. Develop job specifications for basic skills staff (teacher of mathematics, teacher of english and teacher of writing) to be hired by districts	Division of Vocational Education
4. Hire staff for summer program	Local districts
5. Develop identification procedure for targeting students for the summer program	Division of General Academic Education
6. Select students for the program based on criteria	Local districts
7. Conduct overview session for all project coordinators from the local district	Division of Vocational Education & Division of General Academic Education.
8. Conduct training session for all project coordinators and basic skills instructors	Division of Vocational Educ. & Division of General Academic Education
9. Identify summer employment opportunities for students	Division of Vocational Education & local district
10. Implement summer program	Local district staff
11. Provide 2 technical assistance sessions to local district basic skills staff	Division of Vocational Education & Division of General Academic Education

TASK & TASK DESCRIPTION	RESPONSIBILITY
12. Evaluate program	Division of Vocational Education
13. Prepare first draft of evaluation report on results of program	Division of Vocational Education
14. Submit final evaluation report on results of the summer program	Division of Vocational Education
15. Expand, modify or discontinue summer program based on results of pilot evaluation study	Division of Vocational Education

BUDGET

The budget for each district was as follows:

A. Salary		
Reading Specialist (certification in english, english education or reading	($50.00/day)(30 days) instruction: reading writing	$ 1,500.00
Mathematics Specialist (certification in mathematics)	($50.00/day)(30 days) instruction: mathematics	$ 1,500.00
Writing Specialist	($50.00/day) (30 days) instruction: writing	$ 1,500.00
Work Study Coordinator		$ 1,000.00
C. Travel		
2 technical assistance sessions for identified staff		$ 200.00
D. Supplies		
Materials, manipulatives, consumable materials, dittos, work sheets, etc.		$ 1,000.00
F. Other Direct Costs		
Student work study compensation	($3.35/hr.) (3 hr./day) (30 days)(25 students)	$ 7,538.00
	Total	$14,238.00

The total budget for all 5 districts: (5) ($14,238.00)

Grand Total $71,190.00

IMPLEMENTATION:
A training seminar was provided to all of the participating staff in the pilot sites. Technical experts from the Division of General Academic Education provided in-service training for all of the instructors from the pilot sites in terms of:

(1) student selection criteria and identification procedures;

(2) identification procedures for skills which required remediation;

(3) concentration and organization of in-class instruction;

(4) use of instructional materials:

- Improving Students Abilities to Read and Think: Teaching Strategies Series
- Booklet A: Prereading Strategies
- Booklet B: Reading (Reader-Text Interaction) Strategies A Resource Guide for Reading Teachers of Junior High School Students
- Guidelines for Interpreting the High School Proficiency Test Results
- Measurement and Geometry
- Improving Mathematical Problem-Solving Skills in the Middle Grades
- Research Within Reach: Secondary School Mathematics-- A Research Guided Response to the Concerns of Educators
- Understanding the Writing Process: Introducing Students to Composing
- Identifying Curriculum Needs in Writing as a Result of the High School School Proficiency Test/Reports;

(5) providing nonbiased counseling services for all students who were part of the program; and,

(6) identifying sex fair job placement opportunities for students in their summer work assignments.

Students who participated in the program received intensive remedial instruction in the morning consisting of 1 hour of mathematics instruction, 1 hour of reading instruction and 1 hour of writing instruction. The classes were split into three sections; hence, the youngsters benefited from small class sizes (in some cases as few as 5 students) and received more intensive teacher involvement, interaction and input. Following the morning instructional activities, students had lunch and then went to their supervised employment site for the remaining three hours of the day. Students received the minimum wage from their employment.

The following attendance policy was established for the program:

> A student must attend 25 out of the 30 program days to be considered a participant in the program (i.e. counted in the evaluation of the program.).

A student must participate in the morning basic skills session of the program in order to participate and be paid for the afternoon work experience portion of the program.

If a student dropped out of the program during the first two weeks of the session, that student would have been replaced with another student who wished to participate in the program (the replacement student's test results were not included in the evaluation results since he/she would not have met the attendance criteria).

Districts were also encouraged to consider some type of sustained intervention (skill reinforcement) during the course of the 1985-86 academic year for those students who participated in the summer program.

In the recruitment of staff for the basic skills summer positions, job descriptions were prepared for (1) teacher of mathematics, (2) teacher of english, and (3) teacher of writing. These notices of vacancy were posted in accordance with each district's personnel policy, as well as affirmative action policy. Each school district, furthermore, assured that it was an equal opportunity employer, had an affirmative action program and would not discriminate against any person because of race, color, religion, national origin, ancestry, age, political affiliation, sex, armed forces liability, physical handicap, social or economic status.

PILOT SITES AND STAFFING

- Bayonne School District
  Superintendent: Mr. James Murphy
  Project Coordinator: Dr. Lois McGuire
  Work Study Coordinator: Mr. Edward Paradine
  Mathematics Instructor: Mr. Joseph Schaffner
  Reading Instructor: Ms. Ava Finnerty
  Writing Instructor: Ms. Joyce Nestle

- Passaic County Vocational Technical School
  Superintendent: Mr. Carl Santaniello
  Project Coordinator: Mr. Frank Zaccaria
  Work Study Coordinator: Mr. Michael Riley
  Mathematics Instructor: John Iurato
  Reading Instructor: Ms. Bonnie Cassapula
  Writing Instructor: Ms. June E. Morgan

- Vineland School District
  Superintendent: Mr. Carl Simmons
  Project Coordinator: Mr. Fred Rosi
  Work Study Coordinator: Mr. Fred Rosi
  Mathematics Instructor: Ms. Erica Hawn
  English Instructor: Ms. Patricia Procaccino
  Writing Instructor: Ms. Virginia Perry

- New Brunswick School District
  Superintendent: Dr. Ronald Larkin
  Project Coordinator: Ms. Ann Marie Current
  Work Study Coordinator: Ms. Sarah Moody
  Mathematics Instructor: Ms. Hermelita Tiangco
  English Instructor: Mr. Andrew Fleming
  Writing Instructor: Ms. Juanita Blowe

- Paterson School District
  Superintendent: Dr. Frank Napier
  Project Coordinator: Mr. Mike Mugno
  Work Study Coordinator: Mr. Joseph Pelliciotti
  Mathematics Instructor: Ms. Carol Cammon
  Reading Instructor: Mr. Peter Larro
  Writing Instructor: Mr. Robert Conforth

STATE STAFFING

Trainer (Mathematics):	Ms. Barbara Nuding Division of General Academic Education
Trainer (Writing and Reading):	Ms. Diane Bloom Division of General Academic Education
Data Analysis:	Mr. Stanley Rabinowitz Division of General Academic Education
Co-Project Director:	Mr. Gregory Buontempo Division of Vocational Education
Co-Project Director:	Dr. Claudia Merkel-Keller Division of Vocational Education

STUDENT PARTICIPATION

Table 1 below presents the number of students who participated in the HSPT Summer Work Study Vocational Program.

Table 1
Number of Students Who Participated in the Program

	New Brunswick	Paterson	Bayonne	Passaic County Vocational	Vineland
Number of students who were enrolled in the program	25	20	22	22	23
Number of students who dropped out of program	7	2	4	2	5
Number of students replaced	0	0	0	0	0
Number of students who finished the program but were not tested	18	18	18	20	18
Number of students who were tested (met the attendance criteria)	12	18	18	20	13

RESULTS:

The post testing of students occurred during the last week of the summer program. All students who had met the attendance criteria (25 out of 30 days) were tested. Some students due to absence took only one section or even one cluster within section of the HSPT; hence the number of students who participated in the post test ranged from 77 to 84.

District staff who taught during the summer program scored the multiple choice portion of the test, while the essay section of the writing test was scored by the same contractor who initially scored the HSPT essay exams for the state. Table II presents the percentages of students who improved in their performance (gain of one point or more) from pre to post test.

Table II

Percentage of Students Who Improved Their
Basic Skills Performance from Pre to Post Test

Total Reading	71.4%
Total Mathematics	78.2%
Total Writing	44.7%
Multiple Choice Writing	61.3%
Essay	19.4%

Presented in Table III are the raw score pre and post test means.

Table III

	N	mean pre	N	mean post
Total Reading	80	55.75	77	66.06
Total Mathematics	80	44.41	78	54.47
Total Writing	80	73.15	78	71.83
Multiple Choice Writing	80	43.48	78	46.01
Essay	80	6.66	78	5.91

Correlated t-tests were computed for total reading, total mathematics, multiple choice writing, essay, and total writing (see Table IV). The results are as follows:

Reading (total): A statistically significant positive mean score difference was found from pre to post test, i.e. the program made a positive difference for some of the students enrolled.

Mathematics (total): A statistically significant positive mean score difference was found from pre to post test, i.e. the program made a positive difference for some of the students enrolled.

Writing (total): No statistically significant mean score differences were found from pre to post test on the total composite score; i.e. when viewed in its totality, the program did not make a difference for students. This result must be further examined by looking at the subcomponent scores which comprise the total writing score (essay and multiple choice writing).

Essay: A statistically significant negative mean score difference was found from pre to post test, i.e. some of the students did more poorly after this portion the program than before being exposed to the program.

Multiple choice writing: A statistically significant mean score positive difference was found from pre to post test, i.e. this portion of the program made a positive difference for some of the students enrolled.

The above analyses deal with the overall effects of the program (treatment) across all schools. One might expect that schools will differ in their performance due to varied implementation of the program, student attitudes and other factors. Table V displays the correlated t-test results for each of the 5 schools in the summer program. Statistically significant findings are marked with an asterisk on the table. These tables show (1) the differential performance across components of the HSPT for each of the 5 schools, and (2) and that some schools are "doing better" than others after their students were exposed to the program. A statistically significant negative t value (marked with an *) indicates a drop in performance), while a statistically significant positive t value (marked with an *) indicates a gain in student performance.

A repeated measures Analysis of Variance (ANOVA) procedure, which is a more sensitive statistical technique, was conducted for each of the 5 program areas: reading, mathematics, writing (total), essay and multiple choice writing. The repeated measures ANOVA basically takes into account variation from school to school and allows us: (1) to say that there are differences in the implementation of the program across schools; (2) to say that there are no differences across schools (i.e. the program is working consistently in all sites); (3) to determine program effects by themselves; and, (4) to examine the program by school interaction.

Tables VI through X present the repeated measures ANOVAs. The data substantiate that fact that only in mathematics and in the writing multiple choice is the program working (producing a positive gain) across all of the 5 participating schools (statistically significant main effects). For reading, the essay and total writing, the analyses highlight the fact that the program (i.e. the intervention) is working differently across the 5 sites (statistically significant program by school interactions). These results can be readily verified by looking at the individual school results (correlated t-tests, Table V). School to school variations may be due to non-uniform implementation of the program or a number of other factors which cannot be clearly identified at this time.

Although attitudes were not directly assessed, students who participated in the summer program benefited in terms of attitude improvement, and strengthened feelings of self-worth and self-esteem as reported informally by their teachers. Most of the students were satisfied with their jobs and were happy about the money that they were earning.

Students who participated in this pilot summer program will be taking the HSPT in spring of 1986 even though they do not belong to the vanguard class for which the HSPT is a criterion for the high school diploma. It is hoped that the data from the spring 1986 administration of the HSPT will confirm the value of this type of summer intervention program.

CONCLUSIONS AND RECOMMENDATIONS:

The pilot data from the HSPT Summer Work Study Vocational Program indicate that the overall program made a positive difference for the students enrolled and should be continued, given program modifications suggested below, next summer for identified students. Students in this year's ninth grade class belong to the cohort for which the HSPT is one of the criterion for high school graduation. Given this preliminary data, it is felt this type of a summer remedial program, coupled with paid employment, would greatly benefit students who do not pass the HSPT in the spring of 1986.

Recommendations to strengthen program delivery for next summer include the following:

1. earlier notification of districts participating in the program thus allowing more time for identification of students to be recruited into the program;

2. greater attention to the placement of students in their work site (this would be automatically facilitated by having more planning time due to earlier site selection of participating schools and students);

3. more parental involvement in the summer program on the part of the parents of the participating students;

4. more broad based recruitment of teaching staff;

5. more intensive training of teaching staff;

6. closer monitoring of the implementation of the summer program to determine areas of instruction emphasized for remediation; and,

7. maintenance of scoring of the tests at the state level rather than the local level to facilitate a quicker turn-around of the data.

APPENDIX

CODE	SCHOOL DISTRICT
1	Bayonne
2	Passaic County Vocational Technical School
3	Vineland
4	New Brunswick
5	Paterson

CMK/js:1/13641

TABLE IV

CORRELATED t-TEST BY VARIABLE FOR OVERALL PROGRAM

SAS

VARIABLE	N	MINIMUM VALUE	MAXIMUM VALUE	MEAN	STANDARD DEVIATION	STD ERROR OF MEAN	T	PR>|T|	
WMCD	80	-25.74000000	30.42000000	2.93400000	10.33030366	1.15496306	2.54	0.0130	*
WRITED	76	-20.95799897	18.29374147	-1.04895349	7.59080605	0.87072517	-1.20	0.2321	
ESSAYD	76	-5.00000000	3.00000000	-0.72368421	1.6701192	0.19157581	-3.78	0.0003	*
MATHD	78	-41.00000000	44.00000000	9.66666667	16.8775667	1.68455271	5.74	0.0001	*
READD	77	-37.00000000	49.00000000	7.62337662	17.6486461	2.01124988	3.79	0.0003	*

* significant $p < .05$

WMCD Multiple choice writing
WRITED Total writing
ESSAYD Essay
MATHD Total mathematics
READD Total reading

Table V

CORRELATED t-TEST BY VARIABLE BY SCHOOL

SAS

VARIABLE	N	MINIMUM VALUE	MAXIMUM VALUE	MEAN	STANDARD DEVIATION	STD ERROR OF MEAN	T	PROB>|T|	
SCHOOL1=1									
WMCD	18	-18.84000000	20.22000000	3.34666667	8.61632923	2.03088828	1.65	0.1177	
WRITED	17	-13.72317759	10.10788117	-0.09419934	6.56141984	1.59137806	-0.06	0.9535	
ESSAYD	17	-4.00000000	2.00000000	-0.47058824	1.66227403	0.40327380	-1.17	0.2603	
MATHD	18	-18.00000000	18.00000000	4.16666667	10.1009609	2.38081932	1.75	0.0981	
READD	18	-9.00000000	26.00000000	6.33333333	9.4682131	2.23167922	2.84	0.0114	*
SCHOOL1=2									
WMCD	20	-25.74000000	18.24000000	2.94600000	9.28249082	2.07562805	1.42	0.1720	
WRITED	20	-13.08391348	18.29374147	1.87552036	7.72086145	1.72643710	1.09	0.2909	
ESSAYD	20	-3.00000000	3.00000000	0.1500000	1.6630663	0.37187293	0.40	0.6912	
MATHD	20	-41.00000000	44.00000000	10.5000000	16.6464790	3.72226586	2.82	0.0109	*
READD	20	-22.00000000	21.00000000	6.6000000	11.3712472	2.54268818	2.60	0.0177	*
SCHOOL1=3									
WMCD	13	-0.84000000	30.42000000	8.04923077	8.20282315	2.27505381	3.54	0.0041	*
WRITED	13	-8.48700643	17.59579104	1.32095500	6.59947205	1.83036422	0.72	0.4843	
ESSAYD	13	-3.00000000	2.00000000	-0.7692308	1.4232502	0.39473857	-1.95	0.0751	
MATHD	13	-6.00000000	39.00000000	16.6923077	12.5325218	3.47589615	4.80	0.0004	*
READD	13	-37.00000000	43.00000000	9.0769231	24.7469242	6.86356185	1.32	0.2107	
SCHOOL1=4									
WMCD	12	-19.32000000	13.80000000	-0.62500000	9.15536653	2.64292667	-0.24	0.8174	
WRITED	11	-10.27262582	5.15845601	-2.71820614	4.60912680	1.38970402	-1.96	0.0790	
ESSAYD	11	-3.00000000	0.00000000	-1.00000000	1.0954451	0.33028913	-3.03	0.0127	*
MATHD	12	-10.00000000	35.00000000	7.33333333	11.8654068	3.42524791	2.14	0.0555	
READD	12	-36.00000000	18.00000000	-3.66666667	14.3674717	4.14753182	-0.88	0.3956	
SCHOOL1=5									
WMCD	17	-23.88000000	19.14000000	1.08352941	14.24863368	3.45580128	0.31	0.7579	
WRITED	15	-20.95799897	7.30722219	-6.86010877	8.31623012	2.14724138	-3.19	0.0065	*
ESSAYD	15	-5.00000000	1.00000000	-1.9333333	1.6242214	0.41937217	-4.61	0.0004	*
MATHD	15	-18.00000000	36.00000000	10.9333333	19.4952986	5.03366445	2.17	0.0475	*
READD	14	-18.00000000	49.00000000	19.0714286	22.5813548	6.03512091	3.16	0.0075	*

* significant $p < .05$

WMCD Multiple choice writing
WRITED Total writing
ESSAYD Essay
MATHD Total mathematics
READD Total reading

TABLE VI

READING

SAS

ANALYSIS OF VARIANCE PROCEDURE

UNIVARIATE TESTS OF HYPOTHESES FOR WITHIN SUBJECT EFFECTS

SOURCE	DF	ANOVA SS	MEAN SQUARE		
READ	1	2237.46103896	2237.46103896	15.93	0.0002 *
READ*SCHOOL1	4	1721.37980353	430.34495088	3.06	0.0218 *
ERROR(READ)	72	10114.65915751	140.48137719		

* significant $p < .05$

TABLE VII

MATHEMATICS

SAS

ANALYSIS OF VARIANCE PROCEDURE

UNIVARIATE TESTS OF HYPOTHESES FOR WITHIN SUBJECT EFFECTS

SOURCE	DF	ANOVA SS	MEAN SQUARE		
MATH	1	3644.33333333	3644.33333333	33.77	0.0001 *
MATH*SCHOOL1	4	644.73205128	161.18301282	1.49	0.2129
ERROR(MATH)	73	7876.93461538	107.90321391		

* significant $p \leq .05$

TABLE VIII

WRITING (TOTAL)

SAS

ANALYSIS OF VARIANCE PROCEDURE

UNIVARIATE TESTS OF HYPOTHESES FOR WITHIN SUBJECT EFFECTS

SOURCE	DF	ANOVA SS	MEAN SQUARE			
WRITING	1	41.81153043	41.81153043	1.68	0.1985	
WRITING*SCHOOL1	4	398.37739199	99.59434800	4.01	0.0054	*
ERROR(WRITING)	71	1762.38522738	24.82232715			

* significant $p \leq .05$

TABLE IX

WRITING (ESSAY)

SAS

ANALYSIS OF VARIANCE PROCEDURE

UNIVARIATE TESTS OF HYPOTHESES FOR WITHIN SUBJECT EFFECTS

SOURCE	DF	ANOVA SS	MEAN SQUARE			
ESSAY	1	19.90131579	19.90131579	16.62	0.0001	*
ESSAY*SCHOOL1	4	19.58552433	4.89638108	4.09	0.0049	*
ERROR(ESSAY)	71	85.01315988	1.19736845			

* significant $p < .05$

TABLE X

WRITING (MULTIPLE CHOICE)

SAS

ANALYSIS OF VARIANCE PROCEDURE

UNIVARIATE TESTS OF HYPOTHESES FOR WITHIN SUBJECT EFFECTS

SOURCE	DF	ANOVA SS	MEAN SQUARE			
WRITEMC	1	344.33424000	344.33424000	6.56	0.0125	*
WRITEMC*SCHOOL1	4	276.71532973	69.17883243	1.32	0.2713	
ERROR(WRITEMC)	75	3938.53403027	52.51378707			

* significant $p < .05$